



THE HEALTH CARE WORKFORCE IN EIGHT STATES: EDUCATION, PRACTICE AND POLICY

Spring 2004

GEORGIA

TABLE OF CONTENTS

• Project Description	1
• Study Methodology	2
• State Summary	3
I. Workforce Supply and Demand	5
II. Health Professions Education	10
III. Physician Practice Location	16
IV. Licensure and Regulation of Practice	18
V. Improving the Practice Environment	22
VI. Exemplary Workforce Legislation, Programs and Studies	25
VII. Policy Analysis	27
• Data Sources	30

The Health Care Workforce in Eight States: Education, Practice and Policy

PROJECT DESCRIPTION

Historically, both federal and state governments have had a role in developing policy to shape the health care workforce. The need for government involvement in this area persists as the private market typically fails to distribute the health workforce to medically underserved and uninsured areas, provide adequate information and analysis on the nature of the workforce, improve the racial and ethnic cultural diversity and cultural competence of the workforce, promote adequate dental health of children, and assess the quality of education and practice.

It is widely agreed that the greatest opportunities for influencing the various environments affecting the health workforce lie within state governments. States are the key actors in shaping these environments, as they are responsible for:

- financing and governing health professions education;
- licensing and regulating health professions practice and private health insurance;
- purchasing services and paying providers under the Medicaid program; and
- designing a variety of subsidy and regulatory programs providing incentives for health professionals to choose certain specialties and practice locations.

Key decision-makers in workforce policy within states and the federal government are eager to learn from each other. This initiative to compile in-depth assessments of the health workforce in 8 states is an important means of insuring that states and the federal government are able to effectively share information on various state workforce data, issues, influences and policies.

Products of this study include individual health workforce assessments for each of the eight states and a single assessment that compares various data and influences across the eight states. In general, each state assessment provides the following:

- 1) A summary of health workforce data, available resources and a description of the extent the state invests in collecting workforce data. [Part of this information has been provided by the Bureau of Health Professions];
- 2) A description of various issues and influences affecting the health workforce, including the state's legislative and regulatory history and its current programs, financing and policies affecting health professions education, service placement and reimbursement, planning and monitoring, and licensure/regulation;
- 3) An assessment of the state's internal capacity and existing strategies for addressing the above workforce issues and influences; and
- 4) An analysis of the policy implications of the state's current workforce data, issues, capacity and strategies.

The development of the project's data assimilation strategy, content and structure was guided by an expert advisory panel. Members of the advisory panel included both experts in state workforce policy (i.e., workforce planners, researchers and educators) and, more broadly, influential state health policymakers (i.e., state legislative staff, health department officials). The advisory panel has helped to ensure the workforce assessments have an appropriate content and effective format for dissemination and use by both state policymakers and workforce experts/officials.

STUDY METHODOLOGY

Study Purpose and Audience

Key decision-makers in workforce policy within states and the federal government are eager to learn from each other. Because states increasingly are being looked to by the federal government and others as proving grounds for successful health care reform initiatives, new and dynamic mechanisms for sharing innovative and effective state workforce strategies between states and with the federal government must be implemented in a more frequent and far reaching manner. This initiative to compile comprehensive capacity assessments of the health workforce in 8 states is an important means of insuring that states and the federal government are able to effectively share information on various state workforce data, issues and influences.

Each state workforce assessment report is not intended to be voluminous; rather, information is presented in a concise, easy-to-read format that is clearly applicable and easily digestible by busy state policymakers as well as by workforce planners, researchers, educators and regulators.

Selection of States

NCSL, with input from HRSA staff, developed a methodology for identifying and selecting 8 states to assess their health workforce capacity. The methodology included, but was not limited to, using the following criteria:

- a. States with limited as well as substantial involvement in one or more of the following areas: statewide health workforce planning, monitoring, policymaking and research;
- b. States with presence of unique or especially challenging health workforce concerns or issues requiring policy attention;
- c. States with little involvement in assessing health workforce capacity despite the presence of unique or especially challenging health workforce concerns or issues requiring policy attention;
- d. Distribution of states across Department of Health and Human Services regions;
- e. States with Bureau of Health Professions (BHP) - supported centers for health workforce research and distribution studies;
- f. States with primarily urban and primarily rural health workforce requirements; and
- g. States in attendance at BHP workforce planning workshops or states that generally have interest in workforce modeling.

Collection of Data

NCSL used various means of collecting information for this study. Methods exercised included:

- a. Phone and mail interviews with state higher education, professions regulation, and recruitment/retention program officials;
- b. Custom data tabulations by national professional trade associations and others (i.e., Quality Resource Systems, Inc.; Johns Hopkins University School of Public Health) with access to national data bases;
- c. Tabulations of data from the most recent edition of federal and state government databases (e.g., National Health Service Corps field strength);
- d. Site visit interviews with various officials in the eight profile states;
- e. Personal phone conversations with other various state and federal government officials;
- f. Most recently available secondary data sources from printed and online reports, journal articles, etc.; and
- g. Comments and guidance from members of the study's expert advisory panel.

STATE SUMMARY

Georgia, though largely rural, is a rapidly growing state that is becoming more urbanized. The proportion of the population that is minority or ethnic—largely African-American—exceeds the national figure. Although the proportion of the state’s population that lacks health insurance mirrors the national average, Georgia’s rural and inner-city population lacks adequate geographical access to basic health care services. The percent of the population residing in primary care and dental federally-designated health professional shortage areas (HPSAs) exceeds the national proportion.

According to recent reports, rural and poor urban areas of the state continue to have difficulty recruiting primary care physicians, despite the fact that the state and federal governments have several programs to spur provider recruitment and retention in these communities. The state’s community health centers in underserved areas voice growing concerns about their difficulty recruiting and retaining physicians and dentists. State officials rank state programs that now support health professions education in underserved areas (i.e., Georgia’s Area Health Education Centers) as having a highly favorable impact on provider recruitment and retention.

Anecdotal information also suggests that low Medicaid reimbursement rates are having an increased impact on Medicaid participation by physicians and dentists, particularly in largely underserved areas of the state. The state’s current fiscal crisis continues to plague support for Medicaid and other state health care programs. Budget cuts in recent years have forced reductions in Medicaid reimbursement rates to most providers. Across-the-board cuts to most other state programs has also forced reductions in many health professions training programs and provider recruitment and retention initiatives.

The state appears to suffer an overall shortage as well as maldistribution of physicians, nurses and dentists. In response to the state’s shortage of nurses and many other non-physician health professionals, the legislature in 2001 created a standing policy committee to address these shortages. (Georgia’s Board for Physicians Workforce has been charged with addressing physician supply issues, and has produced several reports documenting the problem and offering solutions.) The Health Care Workforce Policy Advisory Committee convened with the charge of monitoring and addressing ongoing workforce supply and demand issues in four areas: education programming and financing; data and forecasting; work environment and enhanced productivity; and recruitment and marketing. The Committee realized several accomplishments in the first year and beyond of its existence by helping to establish several new initiatives in the state.

Despite the creation of these and other new initiatives, shortages of nurses and allied health personnel, particularly in hospitals, have not dissipated. The state hospital association voices concern with a growing vacancy rates for nurses (13% in 2002), pharmacists (particularly in rural hospitals) and other health personnel. Although the state’s changing demand for and supply of nurses is becoming better understood, there is a consensus that the nursing shortage in Georgia, like elsewhere, is largely associated with an insufficient capacity of nurse training programs associated with shortages of faculty, space and other resources to educate more nurses. Increasing numbers of qualified applicants are being turned away from nursing schools. Georgia’s nursing shortage is one of the worst nationwide. In response to recent sample surveys of licensed nurses in the state, almost 45 percent of the RNs respondents expect to work for less than another ten years.

Georgia’s physician supply is not keeping pace with the state’s rapidly growing population. A shortage of specialty physicians statewide is becoming evident. Despite that fact the state has four medical schools, Georgia is heavily dependent on other states to train its demand for physicians. About 70 percent of the state’s practicing physicians completed their training in another state, and the number of applicants

to the state's medical schools has declined over the past five years. Growing concern with rising physician malpractice insurance premiums have raised new fears of many physicians curtailing or closing their practices.

Although there is growing concern that Georgia faces an overall shortage of dentists in the near future, oral health experts agree that the state's dental workforce shortage now is largely a maldistribution problem. However, according to recent sample surveys of practicing dentists in the state, more than 45 percent indicate they plan to retire within 10 years. Dentist maldistribution in rural areas is becoming particularly acute. Georgia still requires applicants for licensure in the state to complete their own exams. The licensing board does not recognize regional exams or license by credentialing. Such requirements are often viewed as constraining the state's supply of dentists.

I. WORKFORCE SUPPLY AND DEMAND

Arguably, it is most important initially to understand the marketplace for a state's health care workforce. How many health professionals are in practice statewide and in medically underserved communities? What are the demographics of the population served? How is health care organized and paid for in the state? This section attempts to answer some of these questions by presenting state-level data collected from various sources.

Table I-a.

POPULATION		GA	U.S.
Total Population (2001)		8,383,915	284,796,887
Sex (2000)	% Female	50.8	50.9
	% Male	49.2	49.1
Age (2000)	% less than 18	26.5	25.7
	% 18-64	63.9	61.9
	% 65 or over	9.6	12.4
% Minority/Ethnic (2002)		38.8	30.9
% Metropolitan (2002)*		69.8	81.3

Sources: U.S. Census Bureau, AARP.

Nearly 40 percent of Georgia's residents are identified as minority or ethnic.

Table I-b.

PROFESSION UTILIZATION	GA	U.S.
% Adults who Reported Having Routine Physical Exam Within Past Two Years (1997)	86.0	83.2 (Median)
Average # of Retail Prescription Drugs per Resident (2002)	10.7	10.6
% Adults who Made Dental Visit in Preceding Year by Annual Family Income (1999):		
Less than \$15,000	45	
\$15,000 - \$34,999	63	
\$ 35,000 or more	74	

Sources: CDC, AARP, GAO.

More Georgia adults reported having routine physical exams within the past two years than the national average.

Table I-c.

ACCESS TO CARE		GA	U.S.
% Non-elderly (under age 65) Without Health Insurance	2000-2001	17	17
	1999-2000	16	16
% Children Without Health Insurance	2000-2001	13	12
	1999-2000	10	12
% Not Obtaining Health Care Due to Cost (2000)		11.9	9.9
% Living in Primary Care HPSA (2003)		25.6	21.3
# Practitioners Needed to Remove Primary Care HPSA Designation (2003)		352	--
% Living in Dental HPSA (2003)		14.9	14.7
# Practitioners Needed to Remove Dental HPSA Designation (2003)		162	--

HPSA = Health Professional Shortage Area

Sources: KFF, AARP, BPHC-DSD.

Georgia has a higher percentage of population living in primary care HPSAs than the U.S. as a whole. The state also has a higher percentage of population not obtaining health care due to cost.

Table I-d.

PROFESSIONS SUPPLY				
Profession		# Active Practitioners	# Active Practitioners per 100,000 Population	
			GA	U.S.
Physicians (1998)		12,948	169.6	198
Physician Assistants (1999)		957	12.3	10.4
Nurses	RNs (2000)	67,958	683	782
	LPNs (1998)	21,310	279.1	249.3
	CNMs (2000)	258	3.3	2.1
	NPs (1998)	1,584	20.7	26.3
	CRNAs (1997)	698	9.3	8.6
Pharmacists (1998)		5,530	72.4	65.9
Dentists (1998)		2,672	35.0	48.4
Dental Hygienists (1998)		3,800	49.8	52.1
% Physicians Practicing Primary Care			30.0 (30.0 U.S.)	
% Registered Nurses Employed in Nursing			82.2 (81.7 U.S.)	
% of MDs Who Are International Medical Graduates (IMGs)			34.0 (24.0 U.S.)	

RN= Registered Nurse, LPN= Licensed Practical Nurse, CNM= Certified Nurse Midwife, NP= Nurse Practitioner
 CRNA= Certified Registered Nurse Anesthetist

Source: HRSA-BHPr.

Georgia has a significantly higher proportion of physicians who are International Medical Graduates than the U.S. as a whole.

Table I-e.

NATIONAL HEALTH SERVICE CORPS (NHSC) FIELD STRENGTH			
Total Field Strength (FY 2003) * Includes mental/behavioral health officials		% in Urban Areas	% in Rural Areas
88		39	61
0.41 (0.49 U.S.)			
<i>Field Strength by Profession</i>			
Physicians	51		
Nurses	11		
Physician Assistants	10		
Dentists/Hygienists	12		

HPSA= Health Professional Shortage Area

Source: BPHC-NHSC.

Georgia has less NHSC professionals per 10,000 population living in HPSAs than the U.S. as a whole.

Table I-f.

MANAGED CARE			
Penetration Rate of Commercial and Medicaid HMOs (as % of total population), 2000		GA	U.S.
		15.4	28.1
Profession	MCOs required by state to include profession on their provider panel*	Profession allowed by state to serve as primary care provider in MCOs	Profession allowed by state to coordinate primary care as part of a standing referral
Physicians	Yes	Yes	No
Nurses	No	No	No
Pharmacies	No	No	No
Dentists	Yes	No	No
State requires certain individuals enrolled in MCOs to have direct access to certain specialty (OB/GYN, etc.) providers.			Yes
State requires certain individuals enrolled in MCOs to receive a standing referral to a specialist (OB/GYN, etc.).			No

MCOs = Managed Care Organizations HMOs = Health Maintenance Organizations OB/GYN = Obstetrician/Gynecologist

* This requirement does not preclude MCOs from including additional professions on their provider panels.

Sources: HPTS, AARP.

Only fifteen percent of Georgia residents receive their health care from an HMO.

Table I-g.

REIMBURSEMENT OF SERVICES					
	Profession	% Active Practitioners Enrolled	% Enrolled Receiving Annual Payments Greater Than \$10,000 ¹	Increase of 10% or More in Overall Payment Rates 1998-2003	Bonus or Special Payment Rate for Practice in Rural or Medically Underserved Area
Medicaid	Physicians	*	33.7	No	No
	NPs	58	20.0	No	No
	Dentists	39	38.2	Yes	No
	# of Enrolled Pharmacies				2,059
	% Change in Physician Fees (All Services), 1993-1998				-1.39
	Recent State-Mandated Payment Increases				Yes (for dentists)
Medicare	# Active Practitioners Enrolled (2000)				11,757
	% Practitioners who Accept Fee as Full Payment (2003)				90.4

¹ Generally seen as an indicator of significant participation in the Medicaid program.

² Denominator number from HRSA State Health Workforce Profile, December 2000.

* Numerator data for physicians and nurse practitioners from state Medicaid agencies were unusable: many professionals were apparently double-counted, perhaps due to varying participation in different health plans.

Sources: State Medicaid programs, Norton and Zuckerman “Trends”, HPTS, AARP.

Medicaid physician fees for all services decreased overall in Georgia between 1993 and 1998.

II. HEALTH PROFESSIONS EDUCATION

State efforts to help ensure an adequate supply of health professionals can be understood in part by examining data on the state's health professions education programs—counts of recent students and graduates, amounts of state resources invested in education, and other factors. State officials can gauge how well these providers reflect the state's population by also examining how many students and graduates are state residents or minorities. Knowing to what extent states are also investing in primary care education and how many medical school graduates remain in-state to complete residencies in family medicine is also important.

Table II-a.

UNDERGRADUATE MEDICAL EDUCATION			
# of Medical Schools (<i>Allopathic and Osteopathic</i>)	4	Public Schools	1
		Private Schools	3
		Osteopathic Schools	0
# of Medical Students (<i>Allopathic and Osteopathic</i>)	1998-1999	1543	
	2000-2001	1523	
# Medical Students per 100,000 Population ¹	1998-1999	18.4	
	2000-2001	18.2	
% Newly Entering Students (<i>Allopathic</i>) who are State Residents, 2002-2003		78.0	
Requirement for Students in Some/All Medical Schools to Complete a <i>Primary Care Clerkship</i>	By the State	No	
	By Majority of Schools	Yes	
# of Medical School Graduates (<i>Allopathic and Osteopathic</i>)	1998	383	
	2001	361	
# Medical School Graduates per 100,000 Population ¹	1998	7.3	
	2001	4.3	
% Graduates (<i>Allopathic</i>) who are Underrepresented Minorities, 1994-1998		7.3 (10.5 U.S.)	
% 1987-1993 Medical School Graduates (<i>Allopathic</i>) Entering Generalist Specialties		29.5 (26.7 U.S.)	
State Appropriations to Medical Schools (<i>Allopathic and Osteopathic</i>), 2000-2001	Total	\$98.9 million	
	Per Student	\$64,938	

¹ Denominator number is state population from 2000 U.S. Census.

Sources: AAMC, AAMC Institutional Goals Ranking Report, AACOM, Barzansky et al. "Educational Programs", State higher education coordinating boards.

Nearly eighty percent of newly entering medical school students are state residents. Only seven percent of medical school graduates in Georgia are underrepresented minorities.

Table II-b.

GRADUATE MEDICAL EDUCATION (GME)		
# of Residency Programs (<i>Allopathic and Osteopathic</i>), 2002-2003 ¹		148
# of Physician Residents (<i>Allopathic and Osteopathic</i>), 2002-2003 ¹		1803
# Residents Per 100,000 Population, 2002-2003		21
% Allopathic Residents from In-State Medical School, 2000-2001		27.4
% Residents who are International ² Medical Graduates, 2000-2001		16.2
Requirement to Offer Some or All Residents a <i>Rural Rotation</i>	By the State	No
	By Most Primary Care Residencies	No
<i>Medicaid</i> Payments for Graduate Medical Education, 2002 ³		\$80 million
	Payments as % of Total Medicaid Hospital Expenditures	8.0 (8.0 U.S.)
	Payments Made Directly to Teaching Programs Under Capitated Managed Care	No
	Payments Linked to State Workforce Goals/Goals of Improved Accountability	No
<i>Medicare</i> Payments for Graduate Medical Education, 1998 ³		\$96.1 million

¹ Includes estimated number of osteopathic residencies/residents not accredited by the Accreditation Council for Graduate Medical Education.

² Does not include residents from Canada.

³ Explicit payments for both direct and indirect GME cost.

Sources: AMA, AMA [State-level Data](#), AACOM, State higher education coordinating boards, Henderson “Funding”, Oliver et al. “State Variations.”

Neither the state of Georgia nor most primary care residencies require training programs to offer some or all physician residents a rural rotation.

Table II-c.

FAMILY MEDICINE RESIDENCY TRAINING			
# of Residency Programs, 2001-2002	12	# Residencies Located in Inner City	5
		# Residencies Offering Rural Fellowships or Training Tracks	0
# of Family Medicine Residents, 2001-2002			42
# Family Medicine Residents per 100,000 Population, 2001-2002 ¹			0.5
% Graduates (from state's Allopathic and Osteopathic medical schools) who were First Year Residents in Family Medicine, 1995-2001			14.5
% Graduates (from state's Allopathic medical schools) Choosing a Family Medicine Residency Program Who Entered an In-State Family Medicine Residency, 1995-2001			40.9

¹ Denominator number is state population from 2000 U.S. Census.

Sources: AAFP, AAFP State Legislation, Kahn et al., Pugno et al. and Schmittling et al. "Entry of U.S. Medical School Graduates".

Only fourteen percent of medical school graduates in Georgia were first year residents in family medicine.

Table II-d.

NURSING EDUCATION				
# of Nursing Schools	38	Public Schools		33
		Private Schools		5
# of Nursing Students ¹	5,499	# Associate Degree, 2001-2002		2,022
		# Baccalaureate Degree	2001-2002	241
			2002-2003	2,725
		# Masters Degree	2001-2002	678
			2002-2003	702
		# Doctoral Degree	2001-2002	43
			2002-2003	50
		# Per 100,000 population ²		65.6
# of Nursing School Graduates ¹	1,925	# Associate Degree, 2002		707
		# Baccalaureate Degree	2001	925
			2002	988
		# Masters Degree	2001	268
			2002	223
		# Doctoral Degree	2001	12
			2002	7
		# Per 100,000 population ²		23.0

¹ Annual figure for Associate, Baccalaureate, Masters and Doctoral students/graduates for most recent years available.

² Denominator number is the state population from the 2000 U.S. Census.

Sources: NLN, AACN, State higher education coordinating boards.

The number of baccalaureate students in Georgia rose dramatically from 2001 to 2002.

Table II-e.

PHARMACY EDUCATION			
# of Pharmacy Schools	2	Public Schools	1
		Private Schools	1
# of Pharmacy Students, 2002-2003	967	# Baccalaureate Degree	0
		# Doctoral Degree (<i>PharmD</i>)	967
	# Per 100,000 population*		11.5
# of Pharmacy Graduates, 2001-2002	211	# Baccalaureate Degree	1
		# Doctoral Degree (<i>PharmD</i>)	210
	# Per 100,000 population*		2.5

* Denominator number is state population from 2000 U.S. Census.

Source: AACP.

Table II-f.

PHYSICIAN ASSISTANT EDUCATION			
# of Physician Assistant Training Programs, 2002-2003	3	Public Schools	1
		Private Schools	2
# of Physician Assistant Program Students, 2002-2003			227
# Physician Assistant Program Students per 100,000 Population, 2002-2003			2.70
# of Physician Assistant Program Graduates, 2003			90
# Physician Assistant Program Graduates per 100,000 Population, 2003 ¹			1.07

¹ Denominator number is state population from 2000 U.S. Census.

Sources: APAP, APAP Annual Report.

Table II-g.

DENTAL EDUCATION			
# of Dental Schools	1	Public Schools	1
		Private Schools	0
# of Dental Students, 2000-2001	223		
# Dental Students per 100,000 Population, 2000-2001*	2.7		
# of Dental Graduates, 1999-2000	5.2		
# Dental Graduates per 100,000 Population, 2000*	0.6		
State Appropriations to Dental Schools, 1997	Per Student: \$44,470		
	As % of Total Revenue: 74.8 (31.6 U.S.)		

* Denominator number is state population from 2000 U.S. Census.

Source: ADA.

Table II-h.

DENTAL HYGIENE EDUCATION			
# of Dental Hygiene Training Programs	13	Public Schools	13
		Private Schools	0
# of Dental Hygiene Program Students, 2001-2002	457		
# Dental Hygiene Program Students per 100,000 Population*	5.5		
# of Dental Hygiene Program Graduates, 2000-2001	212		
# Dental Hygiene Program Graduates per 100,000 Population*	2.5		

* Denominator number is state population from 2000 U.S. Census.

Sources: ADHA, AMA Health Professions.

III. PHYSICIAN PRACTICE LOCATION

The following tables examine in-state physician practice location from two different vantage points: (1) of all physicians who were trained (went to medical school or received their most recent GME training) in the state between 1975 and 1995, and (2) of all physicians who are now practicing in the state, regardless of where they were trained. Compiled from the American Medical Association's 1999 Physician Masterfile by Quality Resource Systems, Inc., the data importantly illustrates to what extent physician graduates practice in many of the state's small towns, using the rural-urban continuum developed by the U.S. Department of Agriculture.

PRACTICE LOCATION (URBAN/ RURAL) OF PHYSICIANS WHO RECEIVED THEIR MEDICAL SCHOOL TRAINING IN GEORGIA BETWEEN 1975 AND 1995.

Table III-a.

GEORGIA		
Number of physicians who were trained in GA and who are now practicing in GA as a percentage of all physicians practicing in GA.		28.72
Number of physicians who were trained in GA and are practicing in GA, by practice location (metro code ¹), as a percentage of all physicians practicing in GA.	#00	21.79
	#01	37.32
	#02	31.74
	#03	39.68
	#04	31.65
	#05	38.69
	#06	43.61
	#07	42.37
	#08	40.63
	#09	48.08
Number of physicians who were trained in GA and who are now practicing in GA as a percentage of all physicians who were trained in GA.		47.23
Number of physicians who were trained in GA and are practicing in GA, by practice location (metro code ¹), as a percentage of all physicians trained in GA.	#00	45.91
	#01	88.82
	#02	36.11
	#03	30.45
	#04	59.46
	#05	46.11
	#06	72.73
	#07	70.31
	#08	89.66
	#09	78.13

¹ 1995 Rural/Urban Continuum Codes for Metro and Nonmetro Counties. Margaret A. Butler and Calvin L. Beale. Agriculture and Rural Economy Division, Economic Research Service, U.S. Department of Agriculture.

Codes # 00-03 indicate metropolitan counties:

00: Central counties of metro areas of 1 million or more

01: Fringe counties of metro areas of 1 million or more

02: Counties with metro areas of 250,000 - 1 million

03: Counties in metro areas of less than 250,000

Codes # 04-09 indicate non-metropolitan counties:

04: Urban population of 20,000 or more, adjacent to metro area

05: Urban population of 20,000 or more, not adjacent to metro area

06: Urban population of 2,500-19,999, adjacent to metro area

07: Urban population of 2,500-19,999, not adjacent to metro area

08: Completely rural (no place w population > 2,500), adjacent to metro area

09: Completely rural (no place w population > 2,500), not adjacent to metro area

NA: Not Applicable; no counties in the state are in the R/U Continuum Code.

**PRACTICE LOCATION (URBAN/ RURAL) OF PHYSICIANS WHO RECEIVED THEIR
MOST RECENT GME TRAINING IN GEORGIA
BETWEEN 1978 AND 1998.**

Table III-b.

GEORGIA		
Number of physicians who received their most recent GME training in GA and who are now practicing in GA as a percentage of all physicians practicing in GA.		35.64
Number of physicians who received their most recent GME training in GA and are practicing in GA, by practice location (metro code ¹), as a percentage of all physicians practicing in GA.	#00	37.37
	#01	34.11
	#02	37.32
	#03	30.49
	#04	28.63
	#05	26.29
	#06	34.56
	#07	24.05
	#08	40.91
	#09	38.89
Number of physicians who received their most recent GME training in GA and who are now practicing in GA as a percentage of all physicians who were trained in GA.		50.87
Number of physicians who received their most recent GME training in GA and are practicing in GA, by practice location (metro code ¹), as a percentage of all physicians trained in GA.	#00	60.66
	#01	83.76
	#02	37.26
	#03	22.56
	#04	53.72
	#05	32.18
	#06	65.03
	#07	48.22
	#08	69.23
	#09	61.76

¹ 1995 Rural/Urban Continuum Codes for Metro and Nonmetro Counties. Margaret A. Butler and Calvin L. Beale. Agriculture and Rural Economy Division, Economic Research Service, U.S. Department of Agriculture.

Codes # 00-03 indicate metropolitan counties:

00: Central counties of metro areas of 1 million or more

01: Fringe counties of metro areas of 1 million or more

02: Counties with metro areas of 250,000 - 1 million

03: Counties in metro areas of less than 250,000

Codes # 04-09 indicate non-metropolitan counties:

04: Urban population of 20,000 or more, adjacent to metro area

05: Urban population of 20,000 or more, not adjacent to metro area

06: Urban population of 2,500-19,999, adjacent to metro area

07: Urban population of 2,500-19,999, not adjacent to metro area

08: Completely rural (no place w population > 2,500), adjacent to metro area

09: Completely rural (no place w population > 2,500), not adjacent to metro area

NA: Not Applicable; no counties in the state are in the R/U Continuum Code.

IV. LICENSURE AND REGULATION OF PRACTICE

States are responsible for regulating the practice of health professions by licensing each provider, determining the scope of practice of each provider type and developing practice guidelines for each profession. The tables below illustrate the licensure requirements for each of the health professions covered in this study as well as additional information on recent expansions in scope of practice or other novel regulatory measures taken by the state.

Table IV-a.

PHYSICIANS	
LICENSURE REQUIREMENTS	Graduated from accredited school of medicine; received qualifying scores on either USMLE, FLEX, National Board of Medical Examiners examination, or National Osteopathic Boards examination.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	Requires physicians physically located in another state who perform patients care services in Georgia through the use of telecommunication to be licensed to practice medicine in the State, with certain exceptions. A physician outside Georgia will not need a full license in the following situations: to provide consultative services either requested by a Georgia licensed physician and provided on a sporadic basis, or rendered in emergency, or given without expectation of compensation, or provided to a medical school approved by the board of medicine
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	Yes. Patient Right to Know Act was passed in 2001.

Sources: State licensing board, HPTS.

Table IV-b.

PHYSICIAN ASSISTANTS	
LICENSURE REQUIREMENTS	Be of good moral character; complete training in Board approved Physician Assistant's program; and submit a passing score on an examination approved by the Board.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	<p><i>PRESCRIPTIVE AUTHORITY</i> Physician Assistants may prescribe Schedule III-V drugs from an approved formulary.</p> <p><i>PHYSICIAN SUPERVISION</i> Supervising physician must be readily available. Board approval required for utilization of PA in satellite clinic where there is a shortage of health care professionals.</p>

Source: State licensing board.

Table IV-c.

NURSES	
LICENSURE REQUIREMENTS	<p>Registered Nurses (RNs) Have graduated from a nursing education program approved by Georgia Board of Nursing, from a nursing education program in another NCLEX-RN jurisdiction approved by its Board of Nursing, or from a nursing education program approved by appropriate authorities in its territory, province, state, district, or country which meets criteria similar to, and not less stringent than, those established by the Board and receive a passing score on the National Council Licensure Examination for Registered Nurses (NCLEX-RN).</p> <p>Advanced Practice Nurses (APNs) Hold current licensure as a registered professional nurse in Georgia, have completed/graduated from a post-basic educational program, and hold current national certification from the respective certifying organization.</p> <p>Licensed Practical Nurses (LPNs) Have successfully completed a Georgia approved practical nursing program and passed before the exam date and passed the National Council Licensure Examination for Practical Nurses (NCLEX-PN).</p>
LICENSURE REQUIREMENTS: <i>FOREIGN-TRAINED NURSES</i>	Must have verification of current registered nurse licensure in another territory, province, state, district, or country directly from the licensing board, passing score on the Test of English as a Foreign Language (TOEFL), and receive passing score on NCLEX.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	None. State does not currently participate in interstate licensure compact developed by National Council of State Boards of Nursing.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	<p>PRESCRIPTIVE AUTHORITY No independent prescriptive authority, but APN can be delegated authority to order controlled substances and dangerous drugs medical treatments or diagnostic studies in a public health setting or in certain hospitals and patient clinic settings (ordered under nurse protocols).</p> <p>PHYSICIAN SUPERVISION Certified Nurse Midwives: Must practice “within a health care system that provides for consultation, collaborative management and referral as indicated by the health status of the patient.” CRNAs do not require direct supervision. Nurse Practitioners (NPs) must enter into a written agreement with a supervising physician.</p>
RECENT STATE REQUIREMENTS TO IMPROVE WORKING CONDITIONS IN CERTAIN INSTITUTIONS	None.
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	No.

Sources: State licensing board, AANA, ACNM, Pearson “Annual Legislative Update”, HPTS.

Table IV-d.

DENTISTS	
LICENSURE REQUIREMENTS	Graduate from approved school of dentistry, receive a passing score on board approved examination.
LICENSURE REQUIREMENTS: <i>INTERSTATE TELE-CONSULTATION</i>	Full License.

Source: State licensing board.

Table IV-e.

PHARMACISTS	
LICENSURE REQUIREMENTS	Must have attained the age of majority, be of good moral character, have graduated and received a professional degree from a college or school approved by the Board of Pharmacy, have completed an internship program approved by the Board, and have successfully passed examinations approved by the Board.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	Allowed to administer immunizations.
STATE MANDATES INDIVIDUAL PROFESSION PROFILES TO BE PUBLICLY ACCESSIBLE	No.

Source: State licensing board.

Table IV-f.

DENTAL HYGIENISTS	
LICENSURE REQUIREMENTS	Have passed an exam administered or approved by the Georgia Board of Dentistry and have received an Associates Degree from an accredited dental hygiene school.
RECENT STATE MANDATED EXPANSIONS IN SCOPE OF PRACTICE	A 2002 rule allows hygienists to perform dental screenings without the direct supervision of a dentist in settings, which include schools, hospitals, clinics, state, county, local, and federal health programs approved by the Board.

Source: State licensing board, ADHA.

Glossary of Acronyms

CNM: Certified nurse midwife.

CRNA: Certified registered nurse anesthetist.

DEA: Drug Enforcement Agency.

HPSA: Health Professional Shortage Area

NCLEX: National Council Licensure Examination, administered by the National Council of State Boards of Nursing.

NP: Nurse practitioner.

RDHAP: Registered dental hygienist in alternative practice.

V. IMPROVING THE PRACTICE ENVIRONMENT

States have the challenge of not only helping to create an adequate supply of health professionals in the state, but also ensuring that those health professionals are distributed evenly throughout the state. Various programs and incentives are used by states to encourage providers to practice in rural and other underserved areas. The tables in this section describe Georgia's programs as well as the perceived effectiveness of these programs.

RECRUITMENT/ RETENTION INITIATIVES

Table V-a.

INITIATIVE	In Use	Perceived or Known Impact (1= high, 5= low)	Health Professions Affected					
			Physicians	Nurses	Pharmacists	Dentists	Dental Hygienists	Physician Assistants
FOCUSED ADMISSIONS / RECRUITMENT OF STUDENTS FROM RURAL OR UNDERSERVED AREAS	Yes	N/A				X		
SUPPORT FOR HEALTH PROFESSIONS EDUCATION (stipends, preceptorships) IN UNDERSERVED AREAS	Yes	1	X	X	X	X		
RECRUITMENT / PLACEMENT PROGRAMS FOR HEALTH PROFESSIONALS	Yes	3	X					
PRACTICE DEVELOPMENT SUBSIDIES (i.e., start-up grants)	No							
MALPRACTICE PREMIUM SUBSIDIES	No							
TAX CREDITS FOR RURAL / UNDERSERVED AREA PRACTICE	Yes	N/A	X					
PROVIDING SUBSTITUTE PHYSICIANS (<i>locum tenens</i> support)	No							
MALPRACTICE IMMUNITY FOR PROVIDING VOLUNTARY OR FREE CARE	No							
PAYMENT BONUSES / OTHER INCENTIVES BY MEDICAID OR OTHER INSURANCE CARRIERS	Yes	1				X		
MEDICAID REIMBURSEMENT OF TELEMEDICINE	Yes	N/A	X					

Source: State health officials.

N/A = Data was not available.

Georgia has established various recruitment and placement programs for most of the major health professions.

LOAN REPAYMENT/ SCHOLARSHIP PROGRAMS ***Table V-b.**

Program Type	Number of Programs	Number of Annual Participants	Average Retention Rate	Eligible Health Professions					
				Physicians	Nurses	Pharmacists	Dentists	Dental Hygienists	Physician Assistants
LOAN REPAYMENT	2	16	62%	X					
SCHOLARSHIP	1	50	52%	X					

* Includes only state-funded programs which require a service obligation in an underserved area. (NHSC state loan repayment programs are included since the state provides funding.)

Source: State health officials.

WORKFORCE PLANNING ACTIVITIES***Table V-c.**

ACTIVITY	In Use	Health Professions Affected					
		Physicians	Nurses	Pharmacists	Dentists	Dental Hygienists	Physician Assistants
COLLECTION / ANALYSIS OF PROFESSIONS SUPPLY DATA: FROM <u>PRIMARY</u> SOURCES (e.g., licensure renewal process; other survey research)	Yes	X	X	X	X		
	Yes	X	X	X	X		
FROM <u>SECONDARY</u> SOURCES (e.g., state-based professional trade associations)							
PRODUCTION OF RECENT STUDIES OR REPORTS THAT DOCUMENT / EVALUATE THE SUPPLY, DISTRIBUTION, EDUCATION OR REGULATION OF HEALTH PROFESSIONS	Yes	X	X	X	X		
RECENT REGULATORY ACTIONS INTENDED TO REQUIRE OR ENCOURAGE COORDINATION OF POLICIES AND DATA COLLECTION AMONG HEALTH PROFESSIONS GROUPS OR LICENSING BOARDS	Yes	X	X	X	X	X	X

* One state health official supplied these responses. Therefore, data may be limited and may not accurately reflect all current workforce-planning activities in the state.

Georgia collects data and produces reports on most of the major health professions and encourages data collection for all of the major health professions.

VI. EXEMPLARY WORKFORCE LEGISLATION, PROGRAMS AND STUDIES

The following abstracts describe several of Georgia's recent endeavors to understand and describe the status of the state's current health care workforce.

Legislation and Programs

H-156 (2001)

This law requires the Board of Medical Examiners to create physician profiles for license physicians. The profile must include the physician's educational background, board certification, practice history, hospital privileges, and any disciplinary actions taken against the physician.

Certified Nurse Anesthetist (CNAs)-Licensed Practical Nurse (LPNs)- Scholarship

Georgia Health Care Workforce Policy Advisory Committee, 2003

This program is funded by a federal demonstration grant combined with local funds. It provides funding for a bridge scholarship for CNAs identified by nursing homes to undertake LPN training.

Georgia Health Care Workforce Policy Advisory Committee

Department of Community Health, 2001

This committee was created in 2001 to monitor and address ongoing issues of supply, demand, distribution, mix and quality of non-physician health professionals in the state. The group examines recruitment and retention issues, utilization of the workforce, and workforce resources and makes recommendations on establishing and maintaining a high quality workforce in the state.

Georgia Nursing Faculty Scholarship Program

The Health Care Workforce Policy Advisory Committee created this scholarship program in 2003. The scholarship goes to students enrolled in graduate-level education programs in the state that prepare the student to serve on the faculty at a school of nursing. Eligible students receive up to \$10,000 to cover the cost of education and daily living expenses.

The Georgia Board for Physician Workforce

The Board is a state agency that advises both the Governor and the General Assembly on policy issues relating to the physician workforce and medical education. The group: 1) monitors and forecasts the supply and distribution of physicians in the state; 2) coordinates physician workforce planning with state funding for medical education; and 3) aims to assure an adequate supply, specialty mix, and geographic distribution of physicians in the state.

Health Professionals Initiative

Intellectual Capital Partnership Program (ICAPP), 2002

This program is a \$4.55 million public/private partnership between Georgia health care providers and the University System of Georgia. The goal of the program is to increase the number of licensed health professionals in the state by more the 500 in two years. In the program, participating health care employers commit to providing jobs for fast-tracked graduates of in the University system.

Studies

Georgia's Health Professions: A Decade of Change

Morris and Little, University of Georgia, 1996

This paper gives an overview of the health professional workforce in the state of Georgia and provides practitioner-to-population ratios for various professions. It looks at the supply and demand of the professions in the context of geographic distribution using vacancy data from health care institutions.

Georgia's Dental Workforce

Medical College of Georgia, 1999

This report examines data from a statewide survey of dentists and dental hygienists in Georgia. The report includes profiles and tables of the dental workforce on the national, state, and regional level.

The Effect of the Medical Liability Crisis on Physician Supply and Access to Medical Care

The Georgia Board for Physician Workforce, January 2003

The report shows the results of a statewide survey of physicians in the state about the availability, cost and coverage levels of medical liability insurance. The survey results provide information about the effect of the malpractice insurance “crisis” on practice behavior and clinical responsibilities. Furthermore, it quantifies the number and specialty of physicians who are reported to be leaving clinical practice, retiring, or leaving the state as a result of increased medical liability insurance costs.

Physicians by Age, Race, and Gender

Georgia Board for Physician Workforce, 1998

This report provides statistics on the age, race, and gender of physicians by specialty and geographic distribution.

Physician Migration Patterns

Georgia Board for Physician Workforce, 2000

This report details physician migration patterns in and out of the state from 1998 to 2000. It examines demographic characteristics of physicians migrating in and out of the state and identifies counties that experience such migration.

What's Ailing Georgia's Health Care Workforce?

Healthcare Workforce Policy Advisory Committee, August 2000

This report looks at the supply, mix, distribution, and practice aspects of nursing, allied health and behavioral health professionals. It provides a snapshot of Georgia's health care workforce, includes a review and assessment of the state's post secondary education system on workforce supply, and discusses the factors that attract students to health education programs and encourage them to remain there.

VII. POLICY ANALYSIS

Statewide Organizations with Significant Involvement in Health Workforce Development/Analysis

- **Georgia Department of Community Health**
- **Health Care Workforce Policy Advisory Committee**
- **Health Care Workforce Data Consortium**
- **Statewide Area Health Education Centers Network**
- **Georgia Board for Physician Workforce**

Evidence of Collaboration: Significant (largely associated with workforce data collection/analysis and profession recruitment and retention)

Georgia, though largely rural, is a rapidly growing state that is becoming more urbanized. The proportion of the population that is minority or ethnic—largely African-American—exceeds the national figure. Although the proportion of the state’s population that lacks health insurance mirrors the national average, Georgia’s rural and inner-city population lacks adequate geographical access to basic health care services. The percent of the population residing in primary care and dental federally-designated health professional shortage areas (HPSAs) exceeds the national proportion.

According to recent reports, rural and poor urban areas of the state continue to have difficulty recruiting primary care physicians, despite the fact that the state and federal governments have several programs to spur provider recruitment and retention in these communities. The field strength of National Health Service Corps personnel per 10,000 population residing in Georgia HPSAs was just below the national ratio in 2003. The state’s community health centers in underserved areas voice growing concerns about their difficulty recruiting and retaining physicians and dentists. State officials rank state programs that now support health professions education in underserved areas (i.e., Georgia’s Area Health Education Centers) as having a highly favorable impact on provider recruitment and retention. Moreover, Medicaid payment bonuses or other incentives for dental practice in such locations also receive high marks. The state’s physician scholarship and loan repayment programs also report that average retention rates in underserved areas for their recipients exceed fifty percent.

Anecdotal information also suggests that low Medicaid reimbursement rates are having an increased impact on Medicaid participation by physicians and dentists, particularly in largely underserved areas of the state. In 2003, for example, just 39 percent of all practicing dentists were enrolled in Medicaid, and of those, just 39 percent reported receiving annual Medicaid payments from services greater than \$10,000.

The state’s current fiscal crisis continues to plague support for Medicaid and other state health care programs. Budget cuts in recent years have forced reductions in Medicaid reimbursement rates to most providers. Across-the-board cuts to most other state programs has also forced reductions in many health professions training programs and provider recruitment and retention initiatives. In early 2004, there was talk of using the state’s tobacco fund reserves to cease several health care cuts, including elimination of Medicaid adult dental coverage, proposed by the governor to address budget shortfalls.

The state appears to suffer an overall shortage as well as maldistribution of physicians, nurses and dentists. In response to the state’s shortage of nurses and many other non-physician health professionals, the Department of Community Health established in 2000 technical advisory committee which issued a

report, “Code Blue: Workforce in Crisis”, to policymakers documenting the shortages and recommending various action strategies. Effective in 2001, the legislature created a standing policy committee to address the shortages documented in the report. (Georgia’s Board for Physicians Workforce has been charged with addressing physician supply issues, and has produced several reports documenting the problem and offering solutions.) The Health Care Workforce Policy Advisory Committee convened with the charge of monitoring and addressing ongoing workforce supply and demand issues in four areas: education programming and financing; data and forecasting; work environment and enhanced productivity; and recruitment and marketing. A follow-up report on the progress of the Committee was issued in 2003.

The Committee realized several accomplishments in the first year and beyond of its existence. Some of these include:

- Expansion in state support for profession education and training programs in nursing and allied health, many involving the establishment of public-private partnerships;
- Expansion of Georgia’s Service Cancelable Loan program to support students in health careers;
- Creation of a Nursing Faculty Loan Program (through the Georgia Student Finance Authority) jointly supported by labor and a private foundation, and using the state’s workforce investment boards to support bridge scholarships that allow entry-level health workers to gain skills and move into licensed nursing positions;
- New legislation providing for new data collection from licensees and funding for a Health Care Workforce Integrated Data System;
- Convened regional forums with health care management and labor groups to identify best practices reflecting workplace excellence, and issued a report of such discussions;
- Developed various recruitment and marketing programs to promote health careers in the state.

The Committee’s continued work calls for establishing regional recruitment and workforce resource clearinghouses in conjunction with AHECs, implementing various recruitment and education initiatives in partnership with other state agencies, promoting success and continued expansion of innovative higher education programs, and structuring regulatory and financing incentives to promote workplace excellence. In the past year, due to the state’s budget problems, funding for the work of the Committee and other statewide health workforce initiatives is being reduced and threatens the scope of future state government work on this issue.

To further address health workforce shortages in the state, Georgia in 2002 expanded its successful University System’s Intellectual Capital Partnership Program (ICAPP). Modeling after the Program’s economic development incentive initiative, the expansion creates a health professionals initiative. The public-private partnership includes a state investment for health professions training program-related expenses at 13 institutions in the state’s university system matched by cash and in-kind contributions by Georgia’s health care providers wishing to employ graduates of these training programs to meet their workforce needs. Initial plans for the initiative called for participating institutions to educate more than 500 new health professionals over two years.

Despite the creation of these various new programs, shortages of nurses and allied health personnel, particularly in hospitals, have not dissipated. The state hospital association voices concern with a growing vacancy rates for nurses (13% in 2002), pharmacists (particularly in rural hospitals) and other health personnel. Current budget shortfalls have caused funds for the new service cancelable loan program to be depleted. There are growing calls as well to increase support for other state health professional scholarship and loan programs.

Another growing concern are rising physician malpractice insurance premiums. Recent studies by the Georgia Board for Physician Workforce suggest that these rate increases are forcing many physicians in the state to curtail or close their practices. However, a medical tort reform measure passed by the legislature in 2003 appears to have limited impact on controlling premium increases and provides no cap on damages awarded from malpractice litigation.

In general, Georgia's physician supply is not keeping pace with the state's rapidly growing population. A shortage of specialty physicians statewide is becoming evident. Despite that fact the state has four medical schools, Georgia is heavily dependent on other states to train its demand for physicians. About 70 percent of the state's practicing physicians completed their training in another state, and the number of applicants to the state's medical schools has declined over the past five years.

Nursing

Although the state's changing demand for and supply of nurses is becoming better understood, there is a consensus that the nursing shortage in Georgia, like elsewhere, is largely associated with an insufficient capacity of nurse training programs (associated with shortages of faculty, space and other resources) to educate more nurses. Increasing numbers of qualified applicants are being turned away from nursing schools. Georgia's nursing shortage is one of the worst nationwide. In response to recent sample surveys of licensed nurses in the state, almost 45 percent of the RNs respondents expect to work for less than another ten years. The efforts of the state's Health Care Workforce Policy Advisory Committee to better understand and address these issues, although not sufficient to fully address the problem, receives widespread support in the nursing community.

Dentistry

Although there is growing concern that Georgia faces an overall shortage of dentists in the near future, oral health experts agree that the state's dental workforce shortage currently is largely a maldistribution problem. However, according to recent sample surveys of practicing dentists, more than 45 percent indicate they plan to retire within 10 years. Dentist maldistribution in rural areas is becoming particularly acute. The state's one dental school attempts to address this inequity in its admission policies. The school now partners with the state's AHECs to find disadvantaged youth and make them competitive applicants and to introduce students to community-based training in rural and underserved communities.

Georgia still requires applicants for licensure in the state to complete their own exams and does not recognize regional exams or license by credentialing. Such requirements are often viewed as constraining the state's supply of dentists.

Although the overall supply of dental hygienists in Georgia appears to be adequate, the demand for hygienists in rural areas of the state, however, looks to be exceeding their supply. The total count of hygienists statewide exceeds that of dentists, and the state has 13 hygiene training programs.

DATA SOURCES

Workforce Supply and Demand

American Association of Retired Persons, Public Policy Institute (AARP). Reforming the Health Care System: State Profiles 2000. (Washington, DC: 2001).

American Association of Retired Persons, Public Policy Institute (AARP). Reforming the Health Care System: State Profiles 2003. (Washington, DC: 2003).

Bureau of Primary Health Care, Division of Shortage Designation (BPHC-DSD). Selected Statistics on Health Professional Shortage Areas (Bethesda, MD: December 2003).

Bureau of Primary Health Care, National Health Service Corps (BPHC-NHSC). National Health Service Corps Field Strength: Fiscal Year 2003 (Bethesda, MD: January 2004).

Centers for Disease Control, National Center for Chronic Disease Prevention and Health Promotion. National Oral Health Surveillance System, Oral Health Profiles. (Atlanta, GA: 2003)

Health Resources and Services Administration, Bureau of Health Professions, National Center for Health Workforce Information and Analysis (HRSA-BHPr). State Health Workforce Profiles (Bethesda, MD: December 2000).

Kaiser Family Foundation, Kaiser Commission on Medicaid and the Uninsured (KFF). Health Insurance Coverage in America: 2002 Data Update (Palo Alto, CA: January 2002).

National Conference of State Legislatures, Health Policy Tracking Service (HPTS).

National Conference of State Legislatures, Health Policy Tracking Service. Primary Health Care and Vulnerable Populations (Washington, DC: January 2000).

Personal conversations with CMS regional office officials.

S. Norton and S. Zuckerman. “Trends in Medicaid Physician Fees” Health Affairs. 19(4), July/August 2000.

State Medicaid programs (data from NCSL survey).

United States General Accounting Office (GAO). Oral Health: Dental Disease is a Chronic Problem Among Low-Income Populations. (Washington, DC: April 2000) GAO/HEHS-00-72.

Health Professions Education

American Academy of Family Physicians (AAFP)

American Academy of Family Physicians. State Legislation and Funding for Family Practice Programs. (Washington, DC).

American Association of Colleges of Nursing (AACN)

American Association of Colleges of Osteopathic Medicine (AACOM). Annual Statistical Report. (Chevy Chase, MD).

American Association of Colleges of Pharmacy (AACP). Profile of Pharmacy Students. (Alexandria, VA).

American Dental Association (ADA)

American Dental Association. 1997-1998 Survey of Predoctoral Dental Educational Institutions. (Washington, DC).

American Dental Hygienist Association (ADHA)

American Medical Association (AMA). Health Professions Career and Education Directory.

American Medical Association. State-level Data for Accredited Graduate Medical Education Programs in the U.S.: 2002-2003. (Washington, DC: 2001)

Association of American Medical Colleges (AAMC)

Association of American Medical Colleges. Institutional Goals Ranking Report. (AAMC website).

Association of Physician Assistant Programs (APAP).

Association of Physician Assistant Programs. Sixteenth Annual Report on Physician Assistant Educational Programs in the United States, 2002-2003. (Loretto, PA: 2001).

Barzansky B. et al., “Educational Programs in U.S. Medical Schools, 2002-2003” JAMA. 290(9), September 3, 2003.

Henderson, T., Funding of Graduate Medical Education by State Medicaid Programs, prepared for the Association of American Medical Colleges, April 1999.

Kahn N. et al., “Entry of U.S. Medical School Graduates into Family Practice Residencies: 1997-1998 and 3-year Summary” Family Medicine. 30(8), September 1998.

Kahn N. et al., “Entry of U.S. Medical School Graduates into Family Practice Residencies: 1996-1997 and 3-year Summary” Family Medicine. 29(8), September 1997.

Kahn N. et al., “Entry of U.S. Medical School Graduates into Family Practice Residencies: 1995-1996 and 3-year Summary” Family Medicine. 28(8), September 1996.

National League for Nursing (NLN)

Oliver T. et al., State Variations in Medicare Payments for Graduate Medical Education in California and Other States, prepared for the California HealthCare Foundation. (Data from the Health Care Financing Administration, compiled by the Congressional Research Service.)

Pugno P. et al., “Entry of U.S. Medical School Graduates into Family Practice Residencies: 1999-2000 and 3-year Summary” Family Medicine. 32(8), September 2000.

Schmittling G. et al. “Entry of U.S. Medical School Graduates into Family Practice Residencies: 1998-1999 and 3-year Summary” Family Medicine. 31(8), September 1999.

State higher education coordinating board/university board of trustees (data from NCSL survey).

Physician Practice Location

1999 American Medical Association Physician Masterfile. Computations were performed by Quality Resource Systems, Inc. of Fairfax, Virginia.

Licensure and Regulation of Practice

American Association of Nurse Anesthetists (AANA)

American College of Nurse Midwives (ACNM). Direct Entry Midwifery: A Summary of State Laws and Regulations. (Washington, DC: 1999).

American College of Nurse Midwives. Nurse-Midwifery Today: A Handbook of State Laws and Regulations. (Washington, DC: 1999).

American Dental Hygienist Association

National Conference of State Legislatures, Health Policy Tracking Service.

Pearson L., editor. “Annual Legislative Update: How Each State Stands on Legislative Issues Affecting Advanced Nursing Practice” The Nurse Practitioner. 25(1), January 2000.

State licensing boards (NCSL survey).

Improving the Practice Environment

State health officials (NCSL survey).